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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 09/887,131 | 06/22/2001 | David W. Daniel | 01-107 | 7730 |
| 7590 | 11/24/2003 | | EXAMINER | |
| LSI LOGIC CORPORATION 1551 MCCARTHY BLVD, MS: D-106 PATENT LAW DEPARTMENT MILPITAS, CA 95035 | | | CHU, CHRIS C | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2815 | |

DATE MAILED: 11/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | |
|------------------------------|--------------------------|---------------------|
| Office Action Summary | Application N . | Applicant(s) |
| | 09/887,131 | DANIEL ET AL. |
| | Examiner Chris C. Chu | Art Unit 2815 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 24 September 2003.

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1 - 17 and 20 is/are pending in the application.

4a) Of the above claim(s) 7, 9 - 17 and 20 is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1 - 6 and 8 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) The translation of the foreign language provisional application has been received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

| | |
|--|--|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ . |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ . | 6) <input type="checkbox"/> Other: _____ . |

DETAILED ACTION

Response to Amendment

1. Applicant's amendment filed on September 24, 2003 has been received and entered in the case.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1 ~ 3, 5, 6 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Matsumi (JP 05-121767).

Regarding claim 1, Matsumi discloses in Fig. 2(a) and abstract, lines 12 – 16 an integrated circuit substrate comprising:

- a first surface for receiving a series of aligned layers (resist pattern, 205, 206, etc.) during the creation of the integrated circuit (208), and
- a second surface disposed substantially opposite the first surface, and having at least one alignment mark (209). Please note that at the processing stage depicted in Fig. 2(a), the back or second surface has no layers formed thereon.

Further, the limitation “formed thereon prior to the first surface receiving any of the series of aligned layers during the creation of the integrated circuit, the at least one alignment mark adapted for aligning the series of aligned layers one to another during the creation of the integrated circuit” is intended use language which does not differentiate the claimed apparatus over Matsumi.

Regarding claim 2, Matsumi discloses in Fig. 2 the second surface being divided into a first half and a second half, with one alignment mark in each of the first half and the second half.

Regarding claim 5, Matsumi discloses in Fig. 2 the at least one alignment mark being recessed into the second surface.

Regarding claim 6, Matsumi discloses in Fig. 2 the at least one alignment mark comprising geometric shapes in a pattern.

Regarding claim 8, Matsumi discloses in Fig. 2 an integrated circuit, the improvement comprising a series of aligned layers aligned upon at least a portion of the substrate (201) of claim 1 (see claim 1 rejection).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumi in view of Glenn et al.

Regarding claim 3, Matsumi discloses the claimed invention except for the second surface being divided into quadrants, with one alignment mark in each of the quadrants. However, Glenn et al. discloses in Figs. 5A the second surface (310B) being divided into quadrants, with one alignment mark (462A ~ 462D) in each of the quadrants. Thus, it would have been obvious to one of ordinary skill in the art at the time when the invention was made to modify Matsumi by using the second surface being divided into quadrants, with one alignment mark in each of the quadrants as taught by Glenn et al. The ordinary artisan would have been motivated to modify Matsumi in the manner described above for at least the purpose of using alignment mark as a reference (column 8, lines 43).

6. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumi in view of Fujimura.

Regarding claim 4, Matsumi discloses the claimed invention except the at least one alignment mark being printed on the second surface. However, Fujimura discloses in column 2, lines 6 ~ 9 at least one alignment mark being printed on a second surface. Thus, it would have been obvious to one of ordinary skill in the art at the time when the invention was made to modify Matsumi by using the at least one alignment mark to be printed on the second surface as taught by Fujimura. The ordinary artisan would have been motivated to modify Matsumi in the manner described above for at least the purpose of providing a coplanar surface on the substrate.

Response to Arguments

7. Applicant's arguments filed on September 24, 2003 have been fully considered but they are either moot in light of the new grounds of rejection or are not persuasive.

On page 6, applicant argues “ independent claim 1 claims, *inter alia*, an integrated circuit substrate having a first surface for receiving a series of aligned layers … and second surface having no layers formed thereon and at least one alignment mark formed thereon … Matsumi does not describe such a substrate.” This argument is not persuasive. Matsumi clearly shows in Fig. 2(a) an integrated circuit substrate (208) having a first surface for receiving a series of aligned layers (205, 206, etc.) … and second surface having no layers formed thereon and at least one alignment mark (209) formed thereon (see paragraph three of this Office action for details).

For the above reasons, the rejection is maintained.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chris C. Chu whose telephone number is (703) 305-6194. The examiner can normally be reached on M-F (10:30 - 7:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on (703) 308-2772. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7382.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Chris C. Chu
Examiner
Art Unit 2815

c.c.
11/20/03 6:09:59 PM



BRADLEY BAUMEISTER
PRIMARY EXAMINER